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Alaska Central Railway Company

The Alaska Central Railway

[Seattle?]

[1903]

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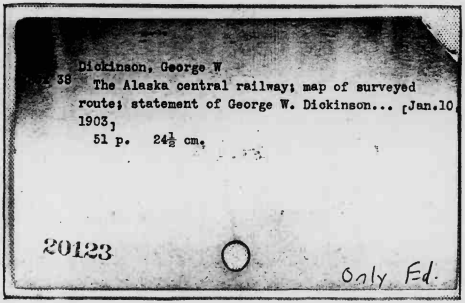

TECHNICAL MICROFORM DATA

FILM SIZE: 35mm REDUCTION RATIO: 14:1 IMAGE PLACEMENT: IA (IIA) IB IIB

DATE FILMED: 3-27-97 INITIALS: MS

TRACKING # : 20801

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THE ALASKA CENTRAL RAILWAY

MAP OF SURVEYED ROUTE.

STATEMENT OF GEORGE W. DICKINSON, PRESIDENT.

RESOURCES AND CHARACTER OF CENTRAL ALASKA, BY TRUSTEES OF ALASKA CENTRAL RAILWAY COMPANY; ENGINEERING FEATURES, BY C. M. ANDERSON, CHIEF ENGINEER, AND ALL THE FIELD ENGINEERS; ESTIMATES OF TRAFFIC, BY CAPT. E. E. CAINE, PRESIDENT AND MANAGER OF THE PACIFIC CLIPPER LINE; SPECIAL REPORT ON AGRICULTURAL, MINERAL AND CLIMATIC CONDITIONS BETWEEN RESURRECTION BAY AND TURNAGAIN ARM, BY J. F. BLEAKLEY, ASSISTANT ENGINEER; THE SOUTHERN HARBOR, BY R. E. FIELD, ENGINEER IN CHARGE OF TERMINAL LOCATIONS; AGRICULTURE IN ALASKA, FROM U. S. GOVERNMENT REPORTS; ALASKA AS IT REALLY IS, BY PROF. C. C. GEORGESON, GOVERNMENT AGENT IN CHARGE OF AGRICULTURAL EXPERIMENT STATIONS; ALASKA'S GROWING COMMERCE, BY WALTER E. CLARK; CONDITION OF CLIMATE, U. S. WEATHER BUREAU; PRESIDENT ROOSEVELT'S COMMENTS ON ALASKA, FROM HIS ANNUAL MESSAGE TO CONGRESS; WHAT PROMINENT ALASKANS SAY; LETTERS FROM SEATTLE BANKERS.

Seattle, Washington, Jan. 10, 1903.

TO THE PUBLIC:

The purpose of the Alaska Central Railway Company is to build a standard gauge railroad through the richest mineral, timber, agricultural and stock grazing region in the central part of Alaska, and thus vastly stimulate the development of a district that has produced $132,500,000 in gold alone since 1897. All competent authorities agree that the varied resources tributary to the Alaska Central are sufficient to sustain a permanent population of not less than 5,000,000 people in a high degree of affluence and civilization. The Alaska Central will invade the field of no other railroad. Indeed, it is the only railroad under project in Central Alaska, and will have a field distinctly its own. I have been for the past twenty years engaged in railroad work, much of that time in the capacity of general superintendent and general manager of the Northern Pacific Railway. I think I am competent to say from my knowledge of every phase of railroad business that the Alaska Central Railway will be a profitable enterprise of great merit, and that it will be on a paying basis from the time the first section of twenty miles is completed. Detailed information concerning the country's mineral, timber, agricultural and stock grazing resources, the climatic conditions, the survey, right of way, terminals, and prospective traffic, are presented in this pamphlet with care and accuracy.

G. W. DICKINSON, President.

CENTRAL ALASKAN RESOURCES.

Gold, Copper, Coal, Timber, Agricultural and Stock Grazing Lands, in an Agreeable Climate, Tributary to the Route of the Alaska Central Railway.

(By the Board of Trustees of the Alaska Central Railway Company.)

A territory that has produced $132,500,000 in gold since 1897, and yet is barely scratched in a few spots; is underlaid with coal deposits known to embrace 500 square miles, with seams two to twenty feet in thickness; has copper ledges of unknown depth which assay as high as 82 per cent. pure copper; contains 260,000,000 acres of merchantable timber; yields from its rivers every year salmon to the value of $8,500,000; and presents opportunities for agriculture and stock grazing in an agreeable climate, tempered by the warm influence of the Japan current, over an area exceeding the combined areas of Iowa, Illinois, Indiana, Ohio, Michigan, New York and Pennsylvania—such a territory is manifestly an inviting field for a railroad so projected as to tap, directly or indirectly, every part of that veritable treasure land.

The resources here enumerated are in the territory of Alaska, all on the American side of the boundary. The total of $132,500,000 produced by the gold mines includes, with the Alaskan output, the yield of the Klondike, just across the line, and is taken from official data at Washington and Ottawa. But every year the volume of gold produced on the American side

has increased by several million dollars over that of the year preceding, and new fields of great extent have been discovered with each recurring season.

It is easily within the truth to say that no other portion of the globe with a producing capacity equal to that of Alaska, and with conditions equally favorable to the maintenance of a permanent population numbered in the millions, is so in need of railroad facilities. Alaska's development, rapid as it has been, and its yearly outflow of wealth, steadily increasing, have been achieved despite the absence of railroad transportation. The great cost of taking in supplies by a circuitous river route, then freighting overland for hundreds of miles, has constituted a handicap which no country but Alaska could overcome. The removal of this handicap by the building of a railroad from the southern coast of Alaska through the central part to the great rivers of the interior is all that is wanting to give an impetus to development which will attract additional miners, lumbermen, agriculturists and stock growers into the territory by the scores of thousands.

Hon. J. W. Ivey, collector of customs under President McKinley, estimates the white population of Alaska today at 75,000. These 75,000 hardy pioneers have gone there since the first discovery of gold in the Klondike in the spring of 1897. Every steamer sailing to Alaska from Seattle, Tacoma, Portland, Victoria, Vancouver and San Francisco carries more to swell the population.

No man of observation need be told that hundreds of thousands of men throughout the United States are awaiting the

building of railroads as an opportunity to cast their fortunes in the new territory.

All who have had any dealings in or with Alaska have recognized for several years the pressing need of a railroad from a harbor on the southern coast, open the year round, through all-American territory, to connect with the two navigable streams of the interior, the Tanana and the Yukon. That need will be supplied by the building of the Alaskan Central Railway.

The route was selected with the utmost care by men familiar with climatic and other conditions in every part of Alaska. The permanent survey of the route was completed during the summer of 1902 by eight crews of surveyors. Their reports are uniformly of the most flattering character with respect both to mineral resources, agricultural and stock raising possibilities, and the absence of engineering difficulties. They speak in praiseworthy terms of the climate, confirming all previous reports of prospectors and government agents to the effect that it is similar to the climates of England, Western Washington, Southern Norway and Scotland.

The engineers at the head of the several crews and the work accomplished by them were:—

R. E. Field—Survey and location of terminals and harbor on Resurrection Bay.

J. G. Scurry—Cross-sectioning for construction from Resurrection Bay north to Kenai Lake, 19 miles.

G. S. Kopp—Cross-sectioning for construction, Kenai Lake north to Trail Creek, 6 miles.

S. N. Dougherty—Permanent survey, Trail Creek north to Turnagain Arm, 43 miles.

J. F. Bleakley—Permanent survey, Turnagain Arm north to Knik Arm, 80 miles.

W. T. Chalk—Permanent survey, Knik Arm north to the Chulitna River, 65 miles.

A. M. White—Permanent survey, Chulitna River north to Broad Pass through the Alaskan range of mountains, 100 miles.

W. G. Atwood—Permanent survey, Broad Pass north to the Tanana River, 100 miles.

The total distance therefore is but 413 miles.

Connection with the navigable rivers of the interior will be attained when the Tanana is reached. The Tanana is larger than the Ohio River and is navigable for boats equal in size to those plying on the Mississippi. It joins the Yukon 150 miles below the Alaska Central.

In locating the route, five considerations were kept in view. They were:

First—A harbor on the southern coast of Alaska, well sheltered, open the year round, central with respect to the interior of Alaska and the outside world, and bordered by land suitable for a terminal city.

Second—A tributary country capable of supporting a profitable traffic from the start.

Third—An easy grade, protected alike from the dangers of spring freshets and winter snows.

Fourth—A route that may be regarded as a trunk line, from which branches and feeders may be extended as developments justify.

Fifth—An interior terminal at a point central to the widest possible area of producing country, with easy communication

up and down the great navigable streams of the interior, the Tanana and the Yukon.

After a detailed examination into the advantages and disadvantages of all the harbors in Southern Alaska, the directors of the Alaska Central Railway Company unanimously decided upon Resurrection Bay as the only one possessing every advantage sought for, and free from all the disadvantages to be avoided.

Resurrection Bay is the most central harbor of Southern Alaska. It is exactly midway between the eastern and the western borders. It is accessible from the interior through an extensive and fertile valley, tempered by the warm influences of the Japan current.

The bay itself is landlocked completely, extends eighteen miles inland, and has a uniform depth of over 500 feet. Depth is a matter of first importance in view of the evolution of the ocean carrying trade to vessels of deep draught. The warmth of the Japan current keeps the bay free from ice every day in winter. As a matter of record, the thermometer there never has gone as low as zero any winter since 1898. The land bordering it on the north slopes gradually to the interior plain on Kenai Peninsula, being admirably adapted to the needs of a terminal city.

The superb advantages of Resurrection Bay were recognized by the Russians 135 years ago. It was here they established their ship-building headquarters for Alaska in 1767. They built on this bay, from native timber, one of the largest frigates of the Russian navy prior to 1800.

The terminal city on Resurrection Bay has been christened Seward. It is in honor of the great Secretary of State through

whose foresight this empire was added to the domains of the United States at a cost of one-third the aggregate value of products now contributed by Alaska every year to the commerce of nations, so early in its career. It is fitting that the city destined to be the metropolis of Alaska, and in time one of the world's important seats of commerce and industry, shall commemorate the statesmanship of the man who first recognized the territory's limitless possibilities.

A feature especially favorable to the earning capacity of the Alaska Central Railway is that every section of twenty or thirty miles from the southern terminus will open a new and independent field as construction progresses. The road will therefore be on an earning basis from the start, without waiting for the entire line to be completed. The inrush of miners, lumbermen, agriculturists and stock growers will keep abreast of construction, if, indeed, not far in advance. A description of the route and the resources tributary to it will afford sufficient proof that such conditions will be realized.

Leaving Seward, the route of the Alaska Central is up the Salmon River Valley, through dense forests of fir, spruce, hemlock and maple, three, four and five feet in diameter; skirting the east shore of Kenai Lake, one of the most beautiful on the continent; up Trail Creek twenty miles and down Placer Creek to Turnagain Arm, through a continuous mineral belt of gold, copper, silver and platinum, where several hundred miners and prospectors have been working since 1892. The region between Kenai Lake and Turnagain Arm could give remunerative employment to 20,000 miners. It is also a paradise for farmers and stock growers. The whole of Kenai Peninsula is capable of supporting as large

an agricultural population as the State of Illinois. It is now being colonized by thrifty settlers, many of whom are Scandinavians.

From the head of Turnagain Arm, the southern prong of Cook Inlet, the route is over a level grade on the north shore of the Arm, in the midst of a region where claims are staked out over many miles of mineral lands, and where miners are awaiting transportation by rail to enable them to bring in the necessary machinery for extensive work. During the last summer one company of Alaskans packed in $60,000 worth of machinery on the backs of horses and mules to its property on Bird Creek, opposite Sunrise. A company of Chicago capitalists, of which Mr. Paul Buckley is president, packed in $80,000 worth of machinery to work fourteen claims, and reaped profits surpassing their anticipations. They assert that with the facilities supplied by railway transportation they can take out $500,000 a year from their fourteen claims. A railroad will make it profitable for hundreds of companies to develop rich properties, where now but few dare to venture owing to lack of transportation. The whole mountain mass between Turnagain and Knik Arms, as likewise on the southern side of Turnagain, is heavily mineralized. This has been demonstrated for so many years that further proof would be a repetition of common knowledge.

Passing around the Knik Mountains to the westward, every mile of the way on a level grade, the route is due north through a valley forest to the head of Knik Arm. Here will unquestionably be the center of a mining, lumbering, agricultural and stock grazing industry of the first magnitude. The Matanuska Valley, coming in from the east, and the wide spreading Susitna Valley,

extending west and north for 150 miles in both directions, make the head of Knik Arm a natural center of distribution. A branch line up the Matanuska Valley into the Copper River country, over a route as easy as the prairies of Illinois, will be built at an early date. Until that time, the safest, easiest route to the Copper River Valley will be from Knik up the Matanuska Valley by wagon road.

North from Knik up the Susitna Valley to the mouth of the Chulitna River is light work, with a 65-mile stretch of almost straight track. The Susitna Valley is covered with millions of acres of timber better than Michigan or Minnesota ever produced. The soil is a rich silt. Where the timber has been burned off the grass grows as high as horses' backs. Settlers at Knik cut three and four tons of hay to the acre every year. They also raise all kinds of vegetables of as fine flavor as any grown in the northern states. Fruit trees recently planted at Knik are beginning to yield abundantly of plums and apples.

Going up the Susitna Valley, the road passes by the foot of the Talkeetna Mountains, where quartz gold and copper exist in abundance. An English company has for the last two years been developing a quartz mine forty miles north of Knik, packing in all machinery on horse back. It must indeed be a rich property that would justify development under circumstances so laborious and expensive. Yet the company's outlay is being well rewarded. Hundreds of other claims are just as promising. The Talkeetna Mountains carry copper quartz which assays as high as 82 per cent. pure. A copper ledge on Montana Creek, eighteen miles above the crossing of the Alaska Central, was discovered last summer. It was traced for three miles. An assay of it produced

gold alone in sufficient quantity to pay for the working, leaving the copper free profit. Good mining engineers declare that the copper deposits on Montana Creek and in other portions of the Talkeetna Mountains are capable of supplying the markets of the world, if developments are borne out by surface croppings. Large quantities of almost pure copper, carrying gold and silver, are found in creek beds of the Talkeetna Mountains. The Indians make knives, spears, hooks and other implements direct from these chunks of native copper.

Montana Creek, Chulitna River and all the headwaters of the Susitna, as well as most of the streams flowing from the Mt. McKinley district, are gold bearing. With crude methods, miners make from $5 to $15 per day on those streams over a region 200 miles long. But the expense of getting in supplies, and the hardships of travel in an out, compel them to pass over such ground. A railroad will effect a revolution. Ground paying $5 to $15 a day per man can then be worked by scores of thousands of miners in the goldbearing gravels now known in this vicinity, and give them employment for many years, leaving out of consideration the other fields yet to be discovered—possibly richer than any uncovered in the Klondike. Who can limit the possibilities of a mineralized region?

Coal is another source of wealth in the Susitna Valley. Seams two to seven feet thick are visible on the river banks along the Susitna and the Chulitna Rivers. Mr. James Casey, a pioneer of Alaska, who represents the Stratton estate of Denver, Colo., in Alaskan mining claims, makes a most positive statement that much of the coal immediately adjacent to the Alaska Central is semi-anthracite. He gives the Alaska Central Railway Company authority to quote him as saying so. To those who know Mr. Casey his word is a bond. The consumption of coal on the Pacific is equal to that on the Atlantic, and semi-anthracite coal, tributary to the Alaska Central, would enjoy a practical monopoly of the Pacific trade. The significance of this is apparent to any man familiar with the profits of coal carrying railroads.

There is room in the Susitna Valley for 1,000 saw mills, and home market enough at the present day in Alaska alone to consume the product of 100. Lumber can be hauled to Seward over the Alaska Central and shipped to the markets of the world, especially the markets of the 400,000,000 people of the Orient, more cheaply than can be done from Puget Sound. One reason for this is the shorter distance from Resurrection Bay to the Orient as compared with the distance from Puget Sound—a difference of three days.

At the junction of the Susitna and Chulitna Rivers, 65 miles north of Knik, and 213 miles north of Seward, the Susitna Valley comes together in low foothills. The route thence follows up the west side of the Susitna River to Indian Creek, all the way through heavy timber and rich mineral lands, with an ascent nowhere exceeding 1 per cent. to the pass through the Alaskan Range. The altitude of the pass is by barometer measurement only 2,300 feet, with easy approaches for fifty miles on both sides. There is little heavy work, no tunneling, and no sharp curvature. The pass through the mountains is a plateau seven miles wide by twelve miles long, covered with fine meadows. A lake midway in the summit is drained at both ends—the south outlet forming the main branch of the Chulitna and the north outlet emptying into the Cantwell.

The continuous supply of resources along the route of the

Alaska Central does not lessen at the summit of the Alaskan Range, but if anything increases. In one of the upper forks of the Cantwell River, flowing from this vicinity northward, the copper sulphates are so strong that the waters of the branch are impregnated with them to the extent that fish cannot live either in this stream or in the Cantwell River. The copper ledges from which the sulphates originate are about twenty miles east of the point where the Alaska Central crosses the Alaskan Range at Broad Pass. It is possible, and indeed probable, that these copper deposits will yet prove to be the richest of the many rich copper deposits in Alaska.

Down the Cantwell to the Tanana is 100 miles, where the work, to quote Division Engineer Atwood, " is a simple problem of putting down the ties and laying the rails for most of the way." There is some gravel cutting, some bridging, some filling, but in the main the road will follow a well defined ridge on the west side of the Cantwell, through to the wide, fertile, densely timbered valley of the Tanana. Going down the Cantwell, the Alaska Central taps what is without doubt one of the most extensive blanket deposits of coal on the American continent. The coal has been traced for forty miles up and down the Cantwell, from Healy's Fork to Coal Creek, and the seams lie one above the other in fifteen beds exposed. How much deeper they go is not known. The seams vary in thickness from one to twenty feet. The upper seams are lignite, but the lower ones are a superior quality of coking and steaming coal.

The importance of these coal fields, as they may contribute to smelting ores cheaply, cannot be overestimated. They will constitute a never failing supply of freight for the return haul

to the coast, for shipment to the markets of the Pacific Ocean. Coal so far is a scarce commodity on the American and Asiatic slopes of the Pacific. These great beds in Alaska will help to supply a notable deficiency for an ever expanding market.

The valley of the Tanana, where the road terminates, has been aptly described by Prof. C. C. Georgeson, government agent in charge of agricultural experiment stations, as "the garden spot of Alaska." Its climate is tempered by the warm winds from the Pacific, and it is free from the heavy rains which fall near the coast. The winters of the Tanana are clear, dry, and altogether very pleasant. It may be hard to believe, but it is a fact nevertheless, that some stretches of the Tanana never freeze over in the severest winter weather. The summers are delightful. The Tanana Valley produces every variety of oats, barley, wheat and vegetables. Corn, too, has been grown there with entire success. The long days and warm sunshine through the growing season cause vegetation to mature in half the time that is required in Minnesota or Iowa. Stock lives through the winter in the Tanana Valley without other feed than that obtained by its own foraging, and comes out in the spring in prime condition. All who know by experience pronounce it much superior as a stock country to Montana or Wyoming, and equal in agricultural opportunities to South Dakota, Wisconsin or Michigan.

The Tanana Valley averages 60 miles wide by 250 long. For the most part it is densely timbered with spruce, but many thousands of acres are open and grow grasses that can be cut with a mower without the expenditure of a dollar for clearing. It is one of the most inviting regions in America for lumbermen, farmers and stock raisers.

The hills and mountains on the north and south sides of

the Tanana are mineralized everywhere. The peninsula between the Tanana and the Yukon is the richest known gold district in Alaska. It will be directly tributary to the Alaska Central, and be opened every day in the year to free communication with the outside world via the Alaska Central to Seward. The only means of reaching it under present conditions is by the long, tedious, uncertain route over the White Pass & Yukon and down the Yukon for 1,800 miles, or else up the Yukon River from its mouth. In the winter months the journey must be made overland, on the ice. The consequences are that the country is now shut in five months of the year, and the cost of importing supplies is so exceedingly expensive that development of the country in mineral resources is not one hundredth part of its possibilities with the advantage of direct railroad communication supplied.

Where now thousands of men are employed, there is room for tens of thousands on the streams and in the ledges known and marked. The annual output of $2,000,000 or $3,000,000 gold in this one district can be increased to $30,000,000 without the discovery of another foot of mineral land as soon as the Alaska Central touches the Tanana.

As an example, on the Chena River, up the Tanana 100 miles above Atwood, there is placer ground which has produced $50 a day to the man, and can produce more by proper working, for fifteen miles up and down its course. But freight now costs $1,000 per ton for transportation to the Chena. The ground consequently cannot be worked with profit even at $50 per day. Many miners of long and practical experience declare that the creeks emptying into the Tanana in a stretch of country starting at Glen Gulch, 75 miles below Atwood, and terminating at Sal-

chacker Creek, 200 miles above, contain more gold than five Klondikes. The only problem is transportation.

The most recent of the many big discoveries in Alaska is on Pedro and Gold Run Creeks, only a few miles above Atwood, the Alaska Central's northern terminus. It is now demonstrated that these new diggings are by far the best and most extensive in Alaska. A stampede to them has been in progress from all parts of the territory since November, 1902, and several thousand miners and prospectors are leaving Seattle for the same district. Fairbanks, the center of the new district, already contains a population of several thousand. Hon. Charles E. Claypool, United States commissioner at Circle City, made an official report under date of January 6, 1903, in which he says 600 claims had been located up to that date, and that the field excelled the Klondike in quality and extent.

The quartz mines of copper and gold in the tributaries of the Tanana will give employment to many thousands of men the day railroad transportation shall open the doors to reasonable freight rates and provide easy access for miners and machinery.

Governor Brady, an honored pioneer of Alaska, gives it as his well matured judgment that Southern and Central Alaska are capable of sustaining a permanent and thrifty population of 5,000,000 highly civilized American citizens, as easily as the State of New York now sustains 7,500,000.

With the Alaska Central Railway from Seward to Atwood serving as the trunk line, and branches built up the various valleys to tap the innumerable deposits of gold, copper and coal; to market the millions of acres of merchantable timber; to open for agriculture and stock grazing the hundreds of millions of

fertile acres, Alaska will indeed become the seat of one of the wealthiest, most numerous people in Europe or America.

Present conditions in Norway, Sweden, Denmark, Russia, Scotland and England, in corresponding latitudes, supply a comparison for the thoughtful mind. The climate of these countries in Europe is moderated by the Gulf stream, 400 miles in width, while the climate of Alaska is tempered by the Japan current, 1,000 miles across. The larger size of the Japan current is due to the larger size of the Pacific Ocean as compared with the Atlantic. The Japan current carries more than twice the volume of warm water from the tropics that the Gulf stream does to the same latitudes of Europe.

Seward, the southern terminus of the Alaska Central, is but a few degrees farther north than London, the metropolis of the world. It is farther south than St. Petersburg, whose population is 1,300,000. Christiana, the largest city in Norway, is on the same latitude as Knik, 100 miles north of Seward. There are twenty cities of 100,000 and upwards in Europe less favorably situated with respect to climate than Atwood, the Alaska Central's northern terminus. Norway's principal railroad operates successfully and profitably 400 miles farther north than the Tanana Valley. The best wheat of Europe is produced in latitudes corresponding to the Susitna and Tanana Valleys.

These important comparisons must be borne in mind in the formation of a just estimate of Alaska and its possibilities.

Still another point is the rapidity with which the whole western country is filling up, as indicating the short time required to pour untold thousands into so attractive a field as Alaska. The population of the United States is now increasing at the rate of

14,000,000 every ten years, or 1,400,000 every year. That swelling surplus is rolling westward in a mighty wave. Every one of the seven transcontinental railroads, some running three trains a day each way, with trains often made up of double sections, carries coaches filled with these overflowing millions in search of new homes and better opportunities than can be had in overcrowded Europe or the eastern half of the United States.

Can any man of intelligence doubt that the development of Alaska will astonish even the most optimistic of us when he contemplates that the increase of population in the United States between 1900 and 1920 will be greater, at the present ratio, than the total increase was for the first eighty years of the last century, from 1800 to 1880?

In view of these manifold considerations, conservatively stated, it is obvious to every thoughtful mind that Alaska today is the most profitable field for railroad development on the American continent.

The foregoing was compiled and is presented as the official statement of the Alaska Central Railway Company. It has been the aim to make a candid, truthful presentation, neither overdrawing nor minimizing the possibilities of that truly wonderful territory. It may be relied upon as substantially accurate in every particular.

THE ALASKA CENTRAL RAILWAY CO.,
By G. W. DICKINSON, President.

Attest:
JOHN E. BALLAINE, Secretary.

ENGINEERING FEATURES.

Easy Grades, Direct Route, No Heavy Work of Consequence, Few Bridges, and Harbor Open the Year Around.

(By C. M. Anderson, Chief Engineer, and all Field Engineers.)

Seattle, Wash., Dec. 10, 1902.

Mr. G. W. Dickinson, President Alaska Central Railway Company, Seattle, Wash.

Dear Sir.—Your instructions to make a survey of the route of the Alaska Central Railway from Resurrection Bay to the Tanana River have been complied with. Eight crews of surveyors, numbering a total of 77 men, were employed in the work, which began the 4th of May, 1902; the last crews returned November 10, 1902.

The entire length of line is 413 miles, as follows:

	Miles.
Seward to Lake Kenai	19
Along shore of Lake Kenai	6
Lake Kenai to head of Turnagain Arm	43
Along north shore of Turnagain Arm	42
Turnagain Arm to Matanuska River	38
Matanuska River to Forks of Susitna	65
Forks of Susitna River to Broad Pass	100
Broad Pass to Tanana River	100
Total	413

Soundings were made at the head of Resurrection Bay and

terminals selected. The Company has filings and options on 1,400 acres of land at the head of the bay; also is entitled by act of Congress to a 200-foot right of way the entire length of its line, and a 20-acre townsite for each 10 miles in length.

From the southern terminal to Kenai Lake, a distance of 19 miles, the line has been located and cross-sectioned, and is ready for construction. The remaining distance is a survey with elevations.

This route is without question the cheapest for railroad construction that can be found from the southern coast of Alaska to the interior, and is the only route of easy grades.

From Resurrection Bay to Kenai Lake, the route is up a wide valley, heavily timbered, with almost a straight run and no heavy work, excepting about five miles in Low Divide, where some rock work is encountered. The grade from Seward for a distance of twelve miles is one-half of one per cent. Between the 12th and 16th mile it is two per cent.; this will be the heaviest grade in the entire route.

The only heavy work between Resurrection Bay and the head of Turnagain Arm is a rock point on the east end of Kenai Lake. There will be a side hill rock cut, on a 20-degree slope, at intervals, for a distance of about five miles, and a small amount of rock work in Placer River, just south of Turnagain Arm. This could be avoided at some sacrifice of distance, but is not heavy enough to justify it.

From the head of Turnagain Arm to the head of Knik Arm —eighty miles—is a nearly level grade. The course along the northern side of Turnagain Arm presents not to exceed six miles

of rock work, and about ten miles of light rock work. The remaining part is light work.

From the head of Knik Arm to the Forks of the Susitna River the course is almost straight—15 degrees west of north—for 65 miles. The rise from tide water to 350 feet elevation at the Forks is gradual, crossing a small elevation of 500 feet, with light grades and no heavy work at all.

From the mouth of the Forks of the Susitna River to the Broad Pass of the Alaskan Range, the general course is 10 degrees east of north, with a maximum grade of one per cent. The line is located on the west side of the Susitna River in such a manner as to make a gradual ascent to a gravel bench at a point in Indian Creek Summit; about twenty miles of this is light rock work, but it is the only rock work anywhere for the entire distance between Knik Arm and Broad Pass, 165 miles. From the head of Indian Creek to Broad Pass is extremely light work. This, and about sixty miles down the Cantwell River, will be the lightest work on the entire route. The pass is a level valley where the cutting and filling will scarcely be noticeable.

From the Summit of the range at Broad Pass, where the elevation by barometer measurement is 2,300 feet, down to the mouth of the Cantwell River, the maximum grade is seven-tenths of one per cent. It is light work all the way, with the exception of two points where rock excavation will be necessary.

A bridge over the Matanuska River at the head of Knik Arm, and another bridge over the Susitna River above the mouth of the Chulitna, will require four spans of 150 feet each. The

rest of the bridging across other streams and canyons will be of moderate size, nowhere exceeding 150 feet.

In general, I may say that the building of this road does not present the difficulties that are encountered by any of the transcontinental railroads in mountain country; in fact, the entire distance does not present any difficulty, and all expensive work is enumerated in this report. The timber offers many advantages which are not available in a prairie country. Chief among them is an abundant supply of ties at cheap cost and material for all the bridging without the necessity of long hauls.

The construction and equipment of a standard gauge railroad of 70-pound rails to the yard, I am certain can be done under thirty-five thousand dollars per mile on this line.

Labor for the construction of a railroad in Alaska will not be much more expensive than it is here. The cost of transporting supplies from Seattle to the southern terminus at Seward is only nominal, as it is water transportation. Teams used in grading can be foraged in the summer time on the best quality of native red top and blue stem grasses, which grow there in such profusion as I have never seen anywhere else in America. This will very materially lessen the cost of feed and be an important item in point of wages for teams.

Work can be carried on anywhere along the route all the winter through. This is the case especially from the southern terminus to Indian Creek, thirty miles south of Broad Pass, for a stretch of 300 miles, where the climate is directly tempered by the warm winds from the Japan current.

When the road is in operation there will be little difficulty encountered from snow. The snowfall is not so great on this line

as it is in the states of Minnesota or Wisconsin. As a matter of fact, the snowfall from the mouth of the Chulitna River north to the Yukon is remarkably light. Further south, the precipitation is heavier. The heaviest precipitation there is in the form of rain from August 1 to November 1; the rest of the year is comparatively clear.

Very respectfully,

(Signed) C. M. ANDERSON,
Chief Engineer Alaska Central Railway Co.

We have read the foregoing report of Col. Anderson, and we attest its accuracy as it applies to our respective divisions. We unite in saying, from our experience in and knowledge of Alaska, that we know the route of the Alaska Central is the most feasible in Alaska from a good harbor on the southern coast to the interior rivers; that it presents no engineering difficulties to make the cost of the work excessive, and that the climatic conditions are favorable to uninterrupted operation throughout the year. The resources of the country to be opened by the Alaska Central are varied and abundant, and will provide a profitable business for a railroad.

JOHN G. SCURRY, Locating Engineer. (Formerly Locating Engineer on the Union, Southern and Northern Pacific

Railroads; Chief Engineer of Construction, Seattle, Lake Shore & Eastern Ry. Six years in Alaska.)

GEORGE S. KOPP, Assistant Engineer on Location. (Formerly Locating and Construction Engineer Northern Pacific Railroad.)

S. N. DAUGHERTY, Assistant Engineer. (Formerly City Engineer, Xenia, Ohio; Construction Engineer Great Northern Railway; Locating Engineer Northern Pacific Railroad; Assistant Engineer Seattle Waterworks.)

J. F. BLEAKLEY, Assistant Engineer. (Formerly Assistant Engineer Southern Pacific Railroad; Surra Valley & Mohawk Railway; Reporting Engineer Alaska Mining Properties. Four years in Alaska.)

W. T. CHALK, Assistant Engineer. (Formerly Locating and Construction Engineer Oregon Railway & Navigation Company; Northern Pacific Railroad; Chief Engineer Walla Walla & Columbia River Railroad; Construction Engineer Oregon Short Line.)

R. E. FIELD, Assistant Engineer. (Formerly in charge of dock construction Northern Pacific Railroad.)

A. M. WHITE, Assistant Engineer. (Formerly Construction Engineer Ferro Carril de Gautemala, Central America; Locating Engineer White Pass & Yukon Railroad. Two years in Alaska.)

WILLIAM G. ATWOOD, Assistant Engineer. (Formerly Construction Engineer City Engineer's Office, Chicago; Superintending Engineer Puget Sound Bridge & Dredging Company. Five years in Alaska.)

ESTIMATES OF TRAFFIC.

Annual Earnings on Conservative Basis to Exceed $11,000 Per Mile at the Start, as Construction Progresses by Sections.

(By Capt. E. E. Caine, President and Manager of the Pacific Clipper Line.)

From my knowledge of the tide of travel to Alaska, after five years of active participation in transportation as the president and manager of the Pacific Clipper Line, I believe I am within the bounds of conservatism in saying that the Alaska Central will carry at least 20,000 new emigrants into the territory contiguous to its route before the road is completed to the northern terminus. It will have a heavy traffic for every mile built as construction progresses northward, for every mile will open a country rich in mineral, timber and agricultural and stock grazing possibilities.

The average number of passengers carried each way daily will easily be 50, on a safe estimate, to start with. That is but one coach full. On steamer days the number will often go to 500. But an average of 50 each way will easily be maintained, making 100 passengers a day. The fare, 10 cents per mile, which is half the fare charged by the White Pass & Yukon on Canadian territory, will thus amount to $10.00 per mile of road every day for passenger traffic. This is $3,650 per mile annually.

In our freight shipments by steamer to Alaska, we average

eight tons of freight for each passenger. The receipts from freight are substantially twice the receipts from passengers.

To illustrate: Thirty-six vessels carried a total of 10,992 passengers between Seattle and the single port of Nome in five months between June 1 and November 1, 1902, going and coming. The passage money collected on these 10,992 passengers was $439,680. The same vessels carried 83,655 tons of freight between those two ports, for which they received $933,860. This is practically eight tons of freight per passenger, and twice the receipts from freight as compared with the receipts from passengers. The total earnings from 10,992 passengers and their freight between Seattle and Nome in five months were thus $1,373,540.

The same proportion will hold good in the passenger and freight traffic on the Alaska Central Railway, only the volume of business should be much larger owing to the wider, richer and more populous field supplied by it. On this basis, with passenger receipts of $3,650 per mile, the freight receipts would be $7,300 per mile. The total earnings from freight and passenger charges would thus be $10,950 a mile per year. Mails and express would supply $200 more, making a gross earning per mile of $11,150.

The operating and maintenance expenses could not exceed 60 per cent of the earnings, at the most extravagant estimate. Sixty per cent of $11,150 is $6,690. This allows for wear and tear of machinery, repairs, etc., in addition to wages of all kinds.

The difference, or net earnings, would therefore be $4,460 per mile annually.

Allowing an interest charge of 5 per cent on $30,000 per

mile for bonds, or $1,500, there would remain $2,960 per mile net to be applied as dividends on stock—the equivalent of 9¾ per cent on $30,000 per mile of stock.

My belief is that the earnings will exceed this estimate, but I have leaned to the side of conservatism rather than optimism.

As bearing on this I may cite that the last annual report of the White Pass & Yukon, the English railroad operating between Skagway and White Horse, announced that dividends of 61 per cent were earned the fiscal year ending in 1902.

It is a matter of common knowledge that the earnings of the White Pass & Yukon paid the entire cost of construction and equipment of the road the first eighteen months of its existence. In this connection I cannot throw a brighter light on the rewards from railroad transportation in Alaska than by quoting from a very able article in the Engineering Magazine for February, 1903, by Harrington Emerson. It will emphasize the points I have made and bring out in more detail the prospects before the Alaska Central. Mr. Emerson says:

"In the year 1901 the White Pass Railroad carried 33,471 tons of freight and 16,472 passengers, receiving from passenger traffic $252,932.71 and from freight, express, mail, and telegrams $1,505,132.64, an average for freight of $43 a ton for 112 miles. Operating expenses, naturally heavy, were 42.42 per cent of the receipts. The first cost of this road, including many expensive franchises and the buying up of possible rivals, was $4,250,000, and in the first season its gross receipts were officially reported to exceed $4,000,000, with operating expenses of about $1,000,000. It causes regret to Americans that this brilliant undertaking, conceived and executed by American engineers, could find no American backers—that London, unhampered by the timidity which afflicts New York in presence of a new region, boldly and promptly investigated, financed, and carried it through. The headquarters of the road have been moved from the United States to Vancouver, and the great bulk of the freight is no longer from the United States but almost wholly from Canada. As long as the British know how to grasp the new trade of the world, when and where it is most profitable, they have no immediate cause to worry about German and American competition."

The net earnings of $3,000,000 a year for the White Pass & Yukon would pay 5 per cent interest on $30,000,000 of bonds and 5 per cent dividends on $30,000,000 of capital stock, or 5 per cent on a capitalization of $60,000,000! I have no hesitation in saying that I believe the Alaska Central will handle double the volume of business from the start that the White Pass & Yukon did. The Alaska Central nowhere encounters the engineering difficulties that the White Pass & Yukon had to overcome, and opens an incomparably richer country measured from every standpoint. The traffic of the Alaska Central will increase very rapidly—more rapidly, I believe, than any man can estimate—and the building of feeders from time to time will add very largely to its earning capacity.

I believe that the volume of business done by the Alaska Central Railway will so exceed any estimate or expectation that the road will literally be burdened with more than it can conveniently handle. There are 20,000 people in the single city of Seattle who would go into Alaska today if railroad communication opened the interior to practical access. The permanent

settlements and industries that will thrive everywhere along the route will add to every year's traffic, and supply a very profitable local business.

Tens of thousands of Scandinavian families can be sent into the territory tributary to the Alaska Central, in addition to the thousands of Americans who will go there.

Altogether, I regard the Alaska Central as one of the best railroad propositions in America.

E. E. CAINE,
President Pacific Clipper Line.

After twenty years of active life in railroad work, half of the time as general superintendent and general manager of one of the transcontinental railroads, I give it as my best judgment that Capt. E. E. Caine's estimate in the foregoing is both conservative and reasonable. I fully expect the earning capacity of the Alaska Central Railway to be equal per mile to the estimate he makes.

G. W. DICKINSON,
President Alaska Central Railway Co.

THE SOUTHERN HARBOR.

Securely Landlocked, Has Depth for Largest Ocean Vessels, Temperature Never Falls Below Zero Any Winter, and is the Most Central to All Alaskan Points.

(By R. E. Field, Engineer in Charge of Terminal Locations.)

Seattle, Wash., Oct. 22, 1902.

Col. C. M. Anderson, Chief Engineer, Seattle, Wash.

Dear Sir.—In compliance with instructions, I located the terminals on Resurrection Bay, made the soundings, and established location for the wharves. The full reports on these locations are attached to the maps presented herewith.

Resurrection Bay is well known as one of the best harbors on the Pacific Coast. As a harbor, I do not believe it has a superior. That is its reputation among navigators to Alaskan points. The entrance to Resurrection Bay, or Almouth Sound, is between two steep and rugged headlands, which rise on the eastern side to mountains 4,000 to 6,000 feet in altitude, and on the west side into mountains of 2,000 to 3,000 feet in altitude. There are several large islands at the mouth, but there is a safe and open channel one mile in width and several hundred feet in depth. About ten miles above the entrance the bay widens to about four miles in width, and maintains this width, approximately, to the north end. The water is very deep, the two hundred feet line being 1,000 feet from shore at the head of the bay, the depth

then becoming less by degrees, to the line of mean tide. In the extreme northwestern corner of the bay, and on the northern shore, there are tide flats covering several thousand acres. For a quarter of a mile from the tide flats, there is good anchorage. Where I located the wharves, just north of Lowell Point, the ocean boats can safely come to within two hundred feet of shore.

From the entrance of the bay to the north end is a distance of, approximately, eighteen miles.

On the east of Resurrection Bay are rugged and high mountains, reaching an altitude of 6,000 feet at the highest points. It is the same mountain chain as that which comes around from Mt. St. Elias westward, encircling Prince William Sound, and finally terminating on the eastern end of Kenai Peninsula. North of Prince William Sound, at a distance of 150 to 200 miles east of Resurrection Bay, these mountains reach altitudes of 8,000 and 10,000 feet. Hence it is, that access to the interior from Prince William Sound, or any point east of Resurrection Bay, is extremely difficult and hazardous, if not impossible. West of Resurrection Bay, the mountains are less rugged and of much lower altitude than those on the east side; while to the north they give way to low, rolling hills. Kenai Peninsula, from the north of Resurrection Bay to Cook Inlet, is a rolling, and in many places level plateau.

The best location for a townsite and terminals on Resurrection Bay is Lowell Point, the site of the Lowell homestead. It is from five to fifty feet above water level, and covers an area of something like 1,000 acres. It has good drainage. This tract will give ample room for a town of 25,000 to 30,000 population. To the northwest and north of the bay, there are other wide

valleys extending for several miles back, which cover 20,000 to 40,000 acres, and would be available for farming and gardening. If the town at this terminus should in time grow to contain a population of 100,000 or more, as might naturally be expected, these valleys on the north and northwest shore would afford room for necessary expansion. I located a terminal of sixty acres just north of the Lowell homestead, as shown by the map submitted to you, and another sixty acres for an additional site on the Lowell homesite. An option has been secured on all of the Lowell homestead. These, together with commercial sites located, comprise not less than 1,400 acres, which the company will have available for terminals.

In closing, I wish to say that the father of the Lowell family here is a great grandson of the founder of Lowell, Mass. Mrs. Lowell told me, and her statement was substantiated by others who have lived long in that country, that she had never known the thermometer to go below zero at Resurrection Bay any winter since they settled there, six years ago. The mean average temperature there for the winter months is about 30 degrees above zero, and the mean average for the summer months, about 60. The influence of the Japan current renders extremes of cold or heat impossible. The bay never freezes over, nor, indeed, does ice form to any extent on the land adjacent. It is little different in this respect from Puget Sound.

The advantages of Resurrection Bay as a safe, commodious, open harbor, could not well be improved. I do not know of a better harbor on the entire Pacific Coast.

(Signed) R. E. FIELD,
Assistant Engineer.

AGRICULTURE IN ALASKA.

Government Agents, as Well as Settlers, Demonstrate that the Country Produces Abundantly of Everything Grown in Northern States.

(From U. S. Government Reports.)

The reports of the government agents in charge of experiment stations at Sitka, Kenai, Rampart, and other points in Alaska, every year since 1898, have fully demonstrated the abundant possibilities of agriculture in Alaska.

At the mouth of the Susitna River, and for 150 miles above its mouth, as well as on Cook Inlet, on Resurrection Bay and all over the Kenai Peninsula west of the Alaska Central, where there are settlements of miners and traders, they are supplied with potatoes, peas, celery, turnips, carrots, all kinds of berries and some varieties of fruits, from native gardens.

The United States Government has had an experiment station at Kenai for the last four years in charge of Prof. C. C. Georgeson, and has grown there with unqualified success every variety of vegetation that can be grown in the states of the upper Mississippi Valley. It must be borne in mind that in the growing season here the sunshine is 18 hours per day. The growth of vegetation is therefore astonishing in its rapidity. (See government reports of the Susitna expedition for 1898, page 24.)

"Along the coast the climate is remarkably mild, when the latitude is considered. As far north as Cook Inlet it compares

very well with that of England and Scotland." (Government reports on the region between Resurrection Bay and Tanana River, 1898, page 49.)

The engineers and others comprising the crews of the Alaska Central surveying parties report that they were supplied with vegetables all summer from native gardens, which were equal in quality to any they ever ate in any of the northern states of the Union.

In his reports to the Secretary of the Interior, Gov. Brady has shown that southern and central Alaska are equal in agricultural capabilities to some of the most favored regions in the northern parts of the United States. The rank growth and rapid maturity of vegetation in these latitudes are due to the long hours of sunshine in the growing season. The sunshine through the months of May, June, July and August averages almost 18 hours out of every 24, and the nights, being short, are warm. There is therefore little check in growth. Two months here in the summer are equal to three and one-half months in Iowa or Minnesota.

SCENIC ATTRACTIONS.

Some of the Most Inspiring Objects of Nature, Including the Highest Mountain in America, Within View from Route of the Alaska Central.

From a scenic standpoint, the route of the Alaska Central Railway offers attractions without parallel in America. Mt. McKinley, the elevation of which is over 20,000 feet above sea level, is a landmark all over Alaska, visible in some places for a distance of 400 miles. It is within plain view everywhere in the Susitna Valley from Knik to the Summit of the Alaskan Range. This mountain is conceded to be the highest peak on the western hemisphere, not excepting any of the Andes. Indeed, a single peak in the Himalayan Mountains of Asia reaches a greater altitude than Mt. McKinley. The mountain is about forty miles west of the Alaska Central's route and 250 miles north of the southern coast of Alaska. It rises symmetrically from the great expanse of billowy, rolling hills that recede from its base.

The Chulitna Valley, about thirty miles wide, lies between the Alaska Central and the eastern extremities of Mt. McKinley. The engineers who made the survey in that region, as well as government geologists and mining prospectors who have been there, unite in pronouncing it the most inspiring object of nature they have ever seen. Mt. Rainier and Mt. Adams in the state of Washington, Mt. Hood in Oregon and Mt. Shasta in California, are pigmies in comparison with gigantic McKinley.

To quote from Engineer R. E. Field's report: "The scenery

along the Chulitna River surpasses in grandeur anything I have ever seen. Mt. McKinley rises to an altitude of 20,000 feet about 40 miles to the westward, and is snow-capped the entire distance above the 5,000 foot altitude. It is an immense mountain in every respect. I estimate that it must be 15 miles in diameter at its base. With the opening of that country by railroad communication, Mt. McKinley will become the most famous object of natural scenery in America. There is nothing that equals it in the Rocky or Cascade Mountains."

All of the streams flowing from Mt. McKinley are gold bearing. Good placer ground has been found on every side of the great mountain—east, north, west and south. Many believe the districts at the foot of Mt. McKinley will prove to carry the greatest deposits of gold, copper and other minerals yet discovered in Alaska.

Aside from the question of minerals, however, it will be the object of never ending admiration for tourists from every part of the world. The tens of thousands of tourists who come every summer from the eastern states and Europe to the Pacific Coast of America will contribute liberally of their numbers to the journey over the Alaska Central. The revenue derived from this class of travel will be large and profitable, especially during the summer months.

ALASKA'S GROWING COMMERCE.

Total now Exceeds $60,000,000 per Year. Items in the Account Which Show the Territory's Wealth.

(By Walter E. Clark, Washington Correspondent of The New York Sun.)

WASHINGTON, D. C., Feb. 13, 1903.

Prior to the opening of the current fiscal year the government kept no systematic record of the domestic commerce of Alaska. It was recognized by well-informed persons that this trade of the territory with other parts of the United States was large and valuable, but no attempt was made to collect the figures for publication by any single department of the government. The treasury department has now completed the record of the Alaska trade for the first six months of the current fiscal period —that is, for the last half of the calendar year 1902. The result is a fine showing for the great resources and the active development of the territory.

The grand total of commerce passing between Alaska ports and ports in other parts of the United States during the last six months of 1902 was $28,720,894. This, of course, takes no account of the foreign trade of the territory, which is larger than many persons suppose. The treasury department's record, just issued, gives the foreign trade of Alaska in the six months ended December 31 as $2,071,764, the exports being $1,573,537 and the imports $498,227. This foreign commerce, added to the domestic trade, raises the total Alaska commerce to $30,792,658.

In the domestic commerce of Alaska there was an enormous balance of trade in favor of the territory. The total value of merchandise and of gold and silver shipped from the United States to Alaska during the last six months of 1902 was $3,428,942. The total value of merchandise and of gold and

silver shipped from Alaska to the United States during the same period was $24,989,188. The balance of domestic trade in favor of the territory is, therefore, $21,570,246.

Some of the principal articles of merchandise, with the amounts thereof, carried into Alaska from other parts of the United States during the last six months of 1902 were as follows: Animals $46,055; breadstuffs, $217,124; chemicals, drugs, etc., $63,795; coal, $77,593; cotton manufactures, $79,752; eggs, $97,311; fruits and nuts, $128,301; hay, $60,671; iron and steel manufactures, $431,693; this item including, of course, a good deal of mining machinery; provisions, $449,575; malt liquors, $55,595; spirituous liquors, $96,892; wine, $10,294; sugar, molasses and confectionery, $77,221; tobacco, $148,166; vegetables, $193,599; wood and manufactures of, $186,298; wool and manufactures of, $194,813.

A few of the principal articles shipped from Alaska to other parts of the United States are these: Salmon, $8,904,423; copper, $52,968; fertilizers, $16,713; cod, haddock, etc., $22,853; other fish, $55,365; iron and steel and manufactures of, $69,428; whalebone, $115,994; manufactures of wood, $16,322; other articles, $79,534. This list does not include all the articles or merchandise. To this record, also, must be added the shipments of gold and silver, amounting in the six months under discussion to $10,653,286.

American shipping interests have, of course, had a monopoly of the Alaska commerce. In December last there were twenty-nine vessels entered at Alaska ports, of which five were foreign bottoms. Of the twenty-nine vessels cleared from Alaska ports during the same month five were foreign. Thirteen of these vessels cleared for foreign ports.

This showing for six months has only to be doubled to give the territory's approximate commerce for a year—$61,585,316. It is going up by rapid strides.

WALTER E. CLARK.

CONDITIONS OF CLIMATE.

Observations of United States Weather Bureau Show Milder Winters than at St. Louis, Mo., and Better Summer Climate than Ohio Valley, Owing to Influences of Japan Currents.

(From U. S. Government Reports.)

The general conditions of climate in the Susitna Valley are covered by the official reports of Thomas W. Hanmore, the United States weather observer at Tyonek. His reports in full for the years 1898 and 1900 are published by the bureau of statistics of the United States Treasury Department, in a pamphlet entitled "Commercial Alaska," 1901.

Tyonek is 100 miles further north than Seward, the southern terminus of the Alaska Capital. It is on the northern shore of Cook Inlet in the Susitna Valley. The weather conditions at Tyonek are practically the same as the conditions all through the Susitna Valley, for 150 miles north.

It is obvious from Mr. Hanmore's official reports that the weather there does not get so cold in the winter time as it does at St. Louis, Mo., and that the summers are much more agreeable than the summers in the Ohio River Valley.

His full reports, as they appear on page 4021 of "Commercial Alaska" for 1901, published by the U. S. Treasury Department, are as follows:

METEOROLOGICAL OBSERVATIONS.

TYONEK. THOMAS W. HANMORE, Observer.

MONTHS	Temperature			Total Precipitation	Weather Observations Number of Days			
	Maximum	Minimum	Daily Mean		Clear	Partly Cloudy	Cloudy	Rain or Snow
1899	°F	°F	°F	Inches				
January	34	−8	5.41	1.	19	7	5	6
February	38	−12	15.3	.85	17	—	11	5
March	48	−4	23.6	.65	22	—	9	2
April	52	22	37.7	1.43	19	5	6	3
May	60	30	43.1	1.05	13	10	8	5
June	68	34	53.1	1.20	24	1	5	4
July	82	45	58.7	1.20	18	3	10	9
August	71	38	56.4	2.72	10	8	13	17
September	70	29	49	5.51	9	11	10	14
October	52	18	35.4	4.02	9	11	11	12
November	44	7	29.2	.58	10	10	10	3
December	41	0	17	.73	20	4	7	3
1900								
January	35	0	13.4	2.69	15	4	12	6
February	39	1	23.7	.52	14	4	10	6
March	58	1	31.9	.59	17	5	9	5
April	56	11	35.5	.60	9	10	11	6
May	68	33	45.4	.29	12	8	11	5
June	82	40	52.9	.72	23	0	7	6
July	75	40	57	1.05	18	7	6	5
August	73	31	54.6	4.94	10	5	16	17
September	67	32	48.7	4.22	14	7	9	11
October	61	10	36.3	1.87	16	3	12	8

The distance inland from the coast subject to the influences of the warm winds from the Japan current may best be indicated by reference to the conditions at Butte, Montana. Butte is 800 miles east of the Pacific Coast, in the heart of the Rocky Mountains, at an altitude of 5,700 feet above sea level. Yet the warm winds from the Pacific penetrate that far every winter and tem-

per the climate so much that the winters at Butte, notwithstanding its location on the backbone of the Rocky Mountains, are milder than the winters at St. Paul or Minneapolis. These warm winds often melt a foot of snow at Butte within a space of twenty-four hours. Places between Butte and the coast feel the effects more strongly, relative to location.

The Tanana Valley is but 300 miles inland from the southern coast of Alaska, and consequently gets the benefit of the moderating winds from the Pacific Ocean scarcely less than points immediately along the coast. In consequence of the warming influence of these winds, winter does not set in throughout the Tanana Valley until well along in November or December, and commences to break up in February.

GREAT MINERAL RESOURCES.

Special Report of Conditions, Including Climatic and Agricultural, Over Region Typical of Entire Distance for 200 Miles.

The mineral formations and possibilities, and likewise the agricultural, timber and climatic conditions of the entire country from Seward to the north end of the Susitna Valley, a distance of 200 miles, are similar to those on Kenai Peninsula between Resurrection Bay and Turnagain Arm. The following special report by Mr. J. F. Blakeley, a mining engineer of long experience and high reputation, will therefore be of timely interest and material value:

December 1, 1902.

Col. C. M. Anderson, Chief Engineer, Alaska Central Ry. Co., Seattle, Wash.

Dear Sir: I observed the following conditions from Resurrection Bay to Turnagain Arm, inclusive:

AGRICULTURAL: The valleys around Resurrection Bay and Lake Kenai and its tributaries are very suitable for diversified farming. Gardens at the bay, and at Sunrise, Hope and Tyonek on the inlet, show that vegetables equal to any in America can be raised in abundance. Hardy cereals do as well as in any of the northern states. Grasses for hay grow from three to seven feet tall wherever they have a chance.

MINERAL: The formation from Resurrection Bay to

Cook Inlet is schist and slate. Every stream around Lake Kenai that has been prospected, shows gold, and several claims are being profitably worked; quartz so far has received no attention. The Turnagain Arm country has been exploited to some extent, but development on a large scale has been materially retarded by the difficulty of access. Many creek bed claims have paid small fortunes to their owners, especially on Resurrection, Bear, Canyon, Lynx and Gulch Creeks; the Polly claim on Mills Creek has yielded over $200,000 in the last five years by very superficial working. This summer, Crow Creek, which was always thought to be low grade ground, turned out to be very rich when opened up. The mineral wealth of the country, however, outside of the quartz possibilities, is in the great deposits of low grade gravel; these occur as high benches on most of the streams. Several hydraulic plants are in different stages of completion; Weibel's on Canyon Creek, and Sleeper's on Resurrection, were in operation this season, with most gratifying results. Given reliable transportation for material and supplies, and a quick, easy mode of access for the miner and investor, Turnagain Arm will be a great hydraulic field. Numerous quartz veins have been discovered in the placer workings. Little interest has been taken in them, the cost of opening them up and getting machinery in being so discouraging. Nothing has been done with a body of high grade copper ore on Lynx Creek for the same reason. Assays from several quartz ledges show high gold values; an arasta (a crude stamp mill) on a vein at Saw Mill Creek is paying well.

TIMBER: All the hillsides in the country, to an elevation of 1,200 feet, are covered with a thick growth of timber, chiefly spruce of harder, closer variety than the Washington spruce.

It is a first class timber and will afford an abundant supply for railroad purposes, ties, piles, trestles, etc. In the States it would be valuable as a finishing wood, as it takes a fine polish.

CLIMATE: Splendid weather throughout the summer. The rainy season is from August 1 to November 1. Frosts commence in October. Residents claim that the winter weather is milder than in the northern states of the Union.

Respectfully,

(Signed) J. F. BLAKELEY,

Assistant Engineer.

WHAT ALASKA REALLY IS.

The Absurdities of Early Misconceptions Exposed and the Vast Possibilities Demonstrated by Experiences of Permanent Settlers.

(By Prof. C. C. Georgeson, U. S. Government Agent in charge of Agricultural Experiments in Alaska in "Commercial Alaska," a Treasury Department Document, 1901.)

He would have been considered a rash prophet who five years ago had the temerity to predict that Alaska would one day become a great and powerful state.

Yet today such a prediction would not be ascribed to prophetic sight, but simply a common-sense view, a foregone conclusion, based on the resources and possibilities inherent in the territory. The change of opinion is due to the fact that it has been demonstrated that Alaska has agricultural possibilities of a high order. The development of agriculture will enhance the value of the other vast and varied resources of the territory a thousandfold. It will make it possible to work the extensive placer mines not rich enough in gold to pay at the present prices for foodstuffs, as well as the enormous deposits of low-grade quartz ores found nearly everywhere in the mountains.

Alaska has been maligned, abused and totally misunderstood. It has been regarded as a frozen, worthless waste, whose only value consisted in its seal fisheries, and totally incapable of furnishing homes for a civilized people. These ideas are still current even in quarters where one would naturally expect to find a knowledge of the facts. Through the instrumentality of Secretary Seward, Alaska was purchased from Russia in 1867 for the sum of $7,200,000. It has already paid for itself many times over, and still we have scarcely begun to realize how enormous

the resources are. More than an equal sum has been taken from a single mine near Juneau, to say nothing of the millions taken out in other places.

Alaska has an area of 591,000 square miles, in round numbers; that is to say, it is as large as all of the United States east of the Mississippi River, exclusive of the four states of Florida, Georgia, Alabama and Mississippi. It requires an effort of the mind to grasp the significance of such an expanse of territory. There never could be a greater misconception in regard to a geographical fact than the popular idea that it is a snow-covered, inhospitable waste, and it is strange that this idea should be so persistently propagated and disseminated among the people. As a matter of fact, you can travel from one end of the Yukon to the other in summer time and never see snow. You see, on the contrary, a tangle of luxuriant vegetation, large forests, and such delicacies as wild raspberries, red currants, huckleberries and cranberries in profusion. In places the grass grows as high as a man's shoudler. At Holy Cross Mission I desired to photograph some cattle native born, reared by the fathers, and for that purpose asked that they be turned into a meadow reserved for hay. To my astonishment I found that the cattle were totally out of sight when they got into the grass, which reached above their backs.

Alaskan tourists are largely responsible for the false conception which is abroad in regard to the agricultural possibilities of the country. The high mountain range which skirts the seacoast is covered with snow and glaciers. It has a rugged, forbidding aspect. People who go as far north as Skagway and back again to Seattle in a two weeks' trip fondly imagine that they are studying Alaska, and that they are quite prepared to pass judgment of the whole territory, when, as a matter of fact, they have not been within 200 miles of the one hundred and forty-first meridian, where Alaska proper begins.

PRESIDENT ROOSEVELT ON ALASKA.

He Knows the Value of the Great Territory, and Makes Recommendations Commensurate to Its Needs.

(From Annual Message to Congress, Dec. 1, 1902.)

I especially urge upon the Congress the need of wise legislation for Alaska. It is not to our credit as a nation that Alaska, which has been ours for thirty-five years, should still have as poor a system of laws as is the case. NO COUNTRY HAS A MORE VALUABLE POSSESSION — IN MINERAL WEALTH, IN FISHERIES, FURS, FORESTS, AND ALSO IN LAND AVAILABLE FOR FARMING AND STOCK-GROWING. IT IS A TERRITORY OF GREAT SIZE AND VARIED RESOURCES, WELL FITTED TO SUPPORT A LARGE PERMANENT POPULATION.

Alaska needs a good land law and such provision for homesteads and pre-emptions as will encourage permanent settlement. We should shape legislation with a view not to the exploiting of the territory, but to the building up of homes therein. The land laws should be liberal in type, so as to hold out inducements to the actual settler whom we most desire to see take possession of the country.

The forests of Alaska should be protected, and, as a secondary but still important matter, the game also, and at the same time it is imperative that the settlers should be allowed to cut timber, under proper regulations, for their own use. Laws should be enacted to protect the Alaskan fisheries against the greed which would destroy them. They should be preserved as a permanent industry and food supply. Their management and control should be turned over to the Commission of Fish and Fisheries. Alaska should have a delegate in the Congress. It would be well if a Congressional committee could visit Alaska and investigate its needs on the ground.

RAILROAD BUILDING IN ALASKA.

(Editorial in San Francisco Chronicle, Nov. 13, 1902.)

Within the next two years Central Alaska promises to be opened up for settlement and development by the construction of a transterritorial railroad. The surveys have been made from Resurrection Bay, on the southeast shore of Kenai Peninsula, to the Yukon River, at Rampart, and the route is said to be highly favorable for the purpose. The northern end of the line will be in the very heart of the territory and in the center of the great valley of the Yukon. Its effect on the development of the territory cannot be overrated. It will pass through a heavily mineralized country and open up vast fields of coal. The section through which it will run possesses, moreover, great agricultural possibilities which will induce settlement and the production of farm products of great value. Enough is already known of the territory's soil and climate to warrant the belief that they are capable of maturing all the food products essential to the support of a large population. As a stock-raising country Alaska will doubtless become in time one of the most notable sections on the continent. Its future development as a field of industry depends largely on the interior valleys being made accessible from the seaboard, and this is the mission which the railroads are destined to fufill.

WHAT PROMINENT ALASKANS SAY.

GOVERNOR BRADY OF ALASKA.—"Southern and Central Alaska can sustain a population of 5,000,000, and can produce anything in the line of vegetables, fruits, grain and hay that can be produced in any of the northern states. The climate of Southern and Central Alaska, as far north as the Yukon River, is better than the climate of Iowa. Alaska's development and settlement in the next decade will be one of the wonders of the age."—Address before Seattle Chamber of Commerce, Aug. 28, 1902.

UNITED STATES JUDGE WICKERSHAM, of the District of Alaska.—"Alaska is being settled by a hardy, enterprising class of people. It will be ready for statehood within ten years. The Susitna and Tanana Valleys are as inviting to permanent settlers as any part of the North American Continent."—Interview in the Seattle Post-Intelligencer, Sept. 9, 1902.

PROF. C. C. GEORGESON, Government Expert in charge of Agricultural Experiment in Alaska.—"The Kenai Peninsula, the Susitna Valley and the Tanana country are the garden spots of Alaska. They are capable of sustaining a population of 3,000,000 people in agriculture and stock-raising alone, to say nothing of minerals. The government experiment stations in those localities are producing as fine vegetables, fruits, grain and hay as can be grown in any state in the Union."—Interview in Seattle Post-Intelligencer, April 15, 1902.

ANDREW J. BALLIET, Attorney, Rampart.—"The building of the Alaska Central Railway will bring scores of

thousands of people into that country and depopulate the Canadian side."—Interview in Seattle Post-Intelligencer, Sept. 7, 1902.

ROBERT F. WHITHAM, Deputy United States Mineral Surveyor for Alaska.—"The route of the Alaska Central Railway penetrates the best part of Alaska. Besides gold, coal and copper, that remarkable country contains one of the finest belts of merchantable timber in America. Lumber might be sawed in the Susitna and Tanana Valleys by 100 mills today and a home market found for every foot of it. Lumber can be shipped from Resurrection Bay to the Orient cheaper than from Puget Sound, owing to the shorter distance."—Official report, April 16, 1902.

SURVEYOR GENERAL DISTIN OF ALASKA.—"The Alaska Central could not have selected a better route for the opening of a country rich in a variety of resources, and affording ready communication every day in the year to the mines, forests and ranges of the interior. I believe that no other road on the Continent of North America will have tributary to it a greater abundance of natural resources to supply a valuable traffic. The Alaska Central will bring untold thousands into its field as fast as it can lay the rails."—Statement to Secretary of Alaska Central Railway Company, Oct. 28, 1902.

LETTERS FROM SEATTLE BANKERS.

(Voluntarily Supplied.)

JACOB FURTH, President Puget Sound National Bank, Seattle.—"All the trustees of the Alaska Central Railway Company are highly respected in this community and are men of first class business ability. The Alaska Central Railway Company has carried an account with this bank during the last year and has paid all its surveying crews promptly each month. I believe there is a profitable field for a railroad from an advantageous harbor on the southern coast of Alaska to the navigable waters of the interior. The country is abundantly rich in a variety of resources and is capable of sustaining a very large population."—October 21, 1902.

JAMES D. HOGE, JR., President First National Bank, Seattle.—"The Alaska Central Railway will open up a rich and vast country off the southern coast of Alaska. The men projecting it are among the most respected in the communities where they reside."—Oct. 22, 1902.

M. F. BACKUS, President Washington National Bank, Seattle.—"It affords me pleasure to be able to state that all of the trustees of the Alaska Central Railway Company bear a high reputation in this community. The development now going on in Alaska is beyond the belief of any one who has not actually visited that country, and I believe that the climate and soil are such as to support a large population."—October 20, 1902.

HON. JOHN H. McGRAW, President of the First National Bank of Seattle, 1890 to 1898, and Governor of Washington, 1893 to 1897; owner of No. 9 (gold mine), Little Manook, Alaska.—"Alaska is the richest mineral district in the world. Its forests of timber are the most valuable outside of Oregon and Washington. Its agricultural and stock grazing possibilities are beyond the belief of those who have not seen the wonderful productivity of its soil and the comparative equability of its climate. The Alaska Central Railway will penetrate and open the best part of that truly great country. The resources of Alaska are capable of supporting a more numerous population than the countries in the corresponding latitudes of Europe, where 15,000,000 of the wealthiest and most enlightened people of the globe reside. If Seattle never should have any other commercial field than Alaska, that is sufficient in itself to make this city one of the greatest in either hemisphere. The development of Alaska, marvelous as it has been, has but fairly begun. I make these statements advisedly, having spent two years in the interior."—Statement to the board of trustees of Alaska Central Railway Company, Nov. 10, 1902.

A. CHILBERG, President Scandinavian-American Bank of Seattle.—"The officers of the Alaska Central Railway Company are among the most prominent and best respected men of this state and Montana. The company has had surveyors at work all summer making a survey of its route. Here in Seattle, where Alaska is known better than in any other city in the United States, we have faith in the development of that great territory, for we know that its resources and climate are favorable to the support of a very large population. The men at the head of the Alaska Central know the advantages and disadvantages of the different sections as well as anybody here, most of them having been extensively over the territory."—October 20, 1902.

END OF
TITLE